



CALS TEST NETWORK

AFCTN Test Report 93-074

AFCTB-ID
93-082

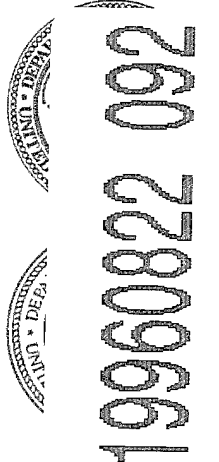


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Using:

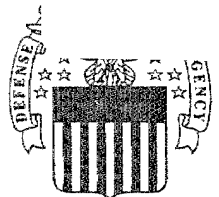


ARINC Research Corporation's Data



MIL-R-28001A (SGML)

Quick Short Test Report



20 August 1993



Prepared for

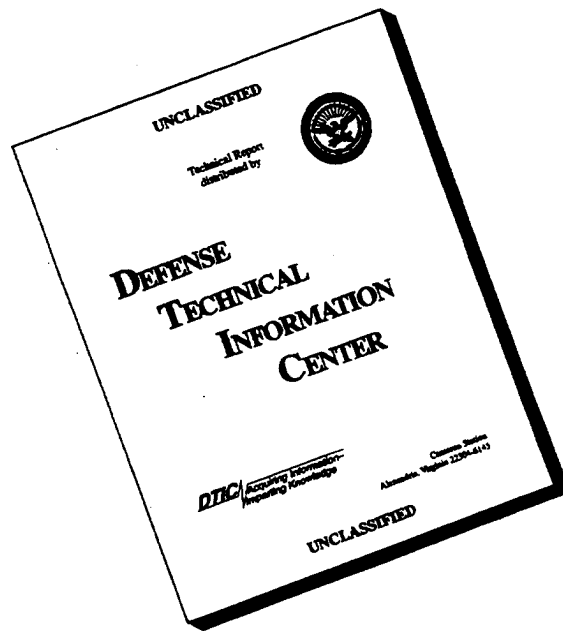
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Using:
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MIL-M-28001A (SGML)

Quick Short Test Report

20 August 1993

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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Computer-aided Acquisition and Logistics Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze ARINC Research Corporation's interpretation and use of the CALS standards in transferring technical publications data. ARINC used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 3.5" disk. Two additional files were provided via electronic transfers.

2. Test Parameters

Test Plan: AFCTB 93-082

Date of
Evaluation: 20 August 1993

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/ENCP
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data
Originator: Rudolph L Bluhm
ARINC Research Corporation
1925 Aerotech Dr
Colorado Springs CO 80916-4219
(719) 574-7040

Data
Description:

Technical Manual Test

1 Document Declaration file
1 Document Type Definition (DTD)
1 Text file

Data
Source System:

1840

HARDWARE

Unknown

SOFTWARE

Unknown

Text/Standard Generalized Markup Language (SGML)

HARDWARE

Unknown

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

PC 486/50

AFCTN Tapetool v1.2.10 DOS

MIL-M-28001 (SGML)

PC 486/50

Exoterica *XGMLNormalizer* v1.2e3.2

Exoterica *Validator* v2.0 EXL

McAfee & McAdam *Sema Mark-it* v2.3

Public Domain *sgmls*

Standards

Tested:

MIL-STD-1840A

MIL-M-28001A

3. 1840A Analysis

3.1 External Packaging

The 3.5" disk arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial disk mailer. The exterior of the mailer was not marked with a magnetic media warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The disk was not enclosed in a barrier bag or barrier sheet material, as required by MIL-STD-1840A, para. 5.3.1.2. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 3.5" disk received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions. The files were placed in the correct location defined by AFCTB procedures.

3.2.1 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the disk meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The 3.5" disk contained no Initial Graphics Exchange Specification (IGES) files.

5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used

in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The files as they came off the disk had a large number of errors in the DTD. All parsers available in the AFCTB reported errors in minimization. None of the elements in the DTD had this required parameter defined. Shown below is an example of an error reported by the Public Domain parser.

sgmls: SGML error at \ws\9382.dtd, line 20 in declaration parameter 2:
Minimization must be "-" or "O" (not "ASPEC"); declaration terminated

These errors were reported to ARINC who inserted the required parameters in the DTD and resubmitted the file via an electronic transfer to the AFCTB.

The resubmitted DTD had no new line characters and was basically one large streamed file. All of the parsers used reported errors in the file format because of elements being broken across lines. The DTD was taken into a word processor and the elements were divided into groups. This permitted the parsers to complete the evaluation of the DTD.

The Text file used during this evaluation was the file from the disk. During a review of the file using a word processor, it was noted that many tags were broken across lines. When the Text file was parsed, this condition was reported as an error. Some of these areas were fixed so that all tags were on the same line, and another parsing operation was completed. On the second attempt, the repaired areas had no reported errors.

A third corrected DTD was provide via an electronic transfer. When this DTD was parsed several elements were reported without minimization. These were fixed and the DTD parsed without a reported error using Exoterica's Normalizer. When the Text file was parsed many errors were reported, because of the tags breaking across lines with a blank line inserted before the remainder of the tag. These conditions were corrected. Other conditions were not reported. The first error was an undefined entity.

:\XGML\XGMLNORM.EXE -- Error on line 683 in file
:\9382\9382-2.txt: Unable to expand entity reference. The
general entity 'E' is undefined.

<SUBPARA2>&E;

The next reported error was a missing data attribute entity.

:\XGML\XGMLNORM.EXE -- Error on line 769 in file
:\9382\9382-2.txt: A REQUIRED attribute is missing. For
start tag 'FIGURE': For REQUIRED CDATA attribute 'FFILE'.

FIGURE FFILE="DMSP A-SPEC Table 3.cgm">

Similar errors were reported by the other parsers.

The provided SGML files do not meet the CALS MIL-M-28001A
specification.

Raster Analysis

The 3.5" disk contained no Raster files.

CGM Analysis

The 3.5" disk contained no Computer Graphics Metafile (CGM)
files.

8. Conclusions and Recommendations

The 3.5" disk provided to the AFCTB by ARINC had no reported errors in the Document Declaration file or data file headers. The disk's physical structure meets the AFCTB requirements for the MIL-STD-1840A.

The SGML files provided on the disk did not meet the MIL-M-28001A specification. ARINC provide three different DTDs and two Text files which had errors. The DTDs were delivered without minimization. When these were added, the DTDs parsed without any reported errors. The Text files were delivered with tags breaking across lines. Many of these tags were separated by a blank line. All of the parsers used in the AFCTB reported these as errors. Upon correcting these problems other errors were reported. The SGML files did not meet the CALS MIL-M-28001A specification.

The 3.5" disk did not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (O)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information
ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
for Information Interchange
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Aug 16 08:29:53 1993

MIL-STD-1840A File Catalog

File Set Directory: C:\TAPETOOL\SET002

Page: 1

File Name Extracted	File Type	Record Format/ Selected/ Length	Block Length/Total

D001 Extracted	Document Declaration	D/00256	02048/000000
D001G001 Extracted	DTD	D/00256	02048/000000
D001T002 Extracted	Text	D/00256	02048/000000

Catalog Process terminated normally.

9.2 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (O)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon Aug 16 08:29:54 1993

MIL-STD-1840A File Set Evaluation Log

File Set: SET002

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: ARINC Research Inc. 4410 E. Fountain Blvd, Colorado Springs, CO 80916

srcdocid: DMSP A Specification

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930812

dstsys: AF CALS Test Bed, 4027 Col. Glenn Hwy, Suite 200, Dayton, OH
45431-1601

dstdocid: DMSP A Specification

dstrelid: NONE

dtetrn: 19930812

dlvacc: NONE

filcnt: G1,T1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: A Specification

docttl: NONE

Found file: D001G001

Extracting DTD Header Records...

Evaluating DTD Header Records...

srcdocid: DMSP A Specification

dstdocid: DMSP A Specification

notes: NONE

Saving DTD Header File: D001G001.HDR

Saving DTD Data File: D001G001.DTD

Found file: D001T002

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: DMSP A Specification
dstdocid: DMSP A Specification
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T002.HDR
Saving Text Data File: D001T002.TXT

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed SGML Analysis

10.1 Exoterica XGMLNormalizer Parser Log

C:\XGML\XGMLNORM.EXE --
Error on line 432 in file i:\9382\9382.txt:
Unknown element name in start tag.
There is no such element as 'SU'.
The current element is 'SUBPARA1'.
End tags for the following elements are allowed: 'SUBPARA1'.
Start tags for the following elements are allowed: 'SUBPARA2'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.

C:\XGML\XGMLNORM.EXE --
Error on line 434 in file i:\9382\9382.txt:
An end tag is missing that must not be omitted.
The element is 'SUBPARA1'.

C:\XGML\XGMLNORM.EXE --
Error on line 437 in file i:\9382\9382.txt:
Syntax error.
Error in end tag.
The last text seen was "PA".
Expecting to see the end of the tag next.

C:\XGML\XGMLNORM.EXE --
Error on line 440 in file i:\9382\9382.txt:
An end tag is missing that must not be omitted.
The element is 'PARA'.

C:\XGML\XGMLNORM.EXE --
Error on line 454 in file i:\9382\9382.txt:
Unexpected start tag encountered.
The start tag is for element 'SUBPARA2'.
The current element is 'SYSCAPRL'.
End tags for the following elements are allowed: 'SYSCAPRL'.
Start tags for the following elements are allowed: 'PARA', 'SUBPARA1'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.
The element 'SUBPARA2' will be treated as an inclusion.

C:\XGML\XGMLNORM.EXE --
Error on line 457 in file i:\9382\9382.txt:
Unexpected start tag encountered.
The start tag is for element 'SUBPARA2'.

The current element is 'SYSCAPRL'.
End tags for the following elements are allowed: 'SYSCAPRL'.
Start tags for the following elements are allowed: 'PARA', 'SUBPARA1'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.
The element 'SUBPARA2' will be treated as an inclusion.

C:\XGML\XGMLNORM.EXE --
Error on line 461 in file i:\9382\9382.txt:
Unexpected start tag encountered.
The start tag is for element 'SUBPARA2'.
The current element is 'SYSCAPRL'.
End tags for the following elements are allowed: 'SYSCAPRL'.
Start tags for the following elements are allowed: 'PARA', 'SUBPARA1'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.
The element 'SUBPARA2' will be treated as an inclusion.

C:\XGML\XGMLNORM.EXE --
Error on line 461 in file i:\9382\9382.txt:
There is no attribute declared with a name group having this member.
For start tag 'TITLE': The name value specified is "T".
Valid member names are: none.

C:\XGML\XGMLNORM.EXE --
Error on line 463 in file i:\9382\9382.txt:
An end tag for an element that is not open is not allowed.
The element is 'SUBPARA1'.
The current element is 'SYSCAPRL'.
End tags for the following elements are allowed: 'SYSCAPRL'.
Start tags for the following elements are allowed: 'PARA', 'SUBPARA1'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.
The end tag will be ignored.

C:\XGML\XGMLNORM.EXE --
Error on line 576 in file i:\9382\9382.txt:
Unknown element name in start tag.
There is no such element as 'TITL'.
The current element is 'SUBPARA3'.
End tags for the following elements are allowed: None.
Start tags for the following elements are allowed: 'TITLE'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.

C:\XGML\XGMLNORM.EXE --
Error on line 576 in file i:\9382\9382.txt:
There is no attribute declared with a name group having this member.

For start tag 'TITLE': The name value specified is "E".
Valid member names are: none.

C:\XGML\XGMLNORM.EXE --
Error on line 591 in file i:\9382\9382.txt:
There is no attribute declared with a name group having this member.
For start tag 'TITLE': The name value specified is "TOCENT".
Valid member names are: none.

C:\XGML\XGMLNORM.EXE --
Error on line 658 in file i:\9382\9382.txt:
Unknown element name in start tag.
There is no such element as 'TITL'.
The current element is 'SUBPARA2'.
End tags for the following elements are allowed: None.
Start tags for the following elements are allowed: 'TITLE'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.

C:\XGML\XGMLNORM.EXE --
Error on line 658 in file i:\9382\9382.txt:
There is no attribute declared with a name group having this member.
For start tag 'TITLE': The name value specified is "E".
Valid member names are: none.

C:\XGML\XGMLNORM.EXE --
Error on line 722 in file i:\9382\9382.txt:
Unknown element name in start tag.
There is no such element as 'SUBP'.
The current element is 'SUBPARA2'.
End tags for the following elements are allowed: 'SUBPARA2'.
Start tags for the following elements are allowed: 'SUBPARA3'.
Start tags for the following inclusions are allowed: 'FIGURE'.
Text is not allowed.

10.2 Exoterica validator Parser Log

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "9382-2.sgm", line 93:
  An EMPTY element must have a start tag and must not have an end tag.
  Therefore, it is inappropriate to specify an omissible start tag or an
  inomissible end tag in its declaration.
  The element is "FIGURE".
  <!ELEMENT      figure  -   -   EMPTY  --tables, graphics, etc; all are cg
  ^^^^^
-->
<!-- **Warning** in "9382-2.sgm", line 99:
  An EMPTY element must have a start tag and must not have an end tag.
  Therefore, it is inappropriate to specify an omissible start tag or an
  inomissible end tag in its declaration.
  The element is "COVER".
  <!ELEMENT      cover   -   -   EMPTY          >
  ^^^^^
-->
<!-- **Warning** in "9382-2.sgm", line 105:
  An EMPTY element must have a start tag and must not have an end tag.
  Therefore, it is inappropriate to specify an omissible start tag or an
  inomissible end tag in its declaration.
  The element is "TPAGE".
  <!ELEMENT      tpage   -   -   EMPTY          >
  ^^^^^
-->
<!-- **Warning** in "9382-2.sgm", line 125:
  An EMPTY element must have a start tag and must not have an end tag.
  Therefore, it is inappropriate to specify an omissible start tag or an
  inomissible end tag in its declaration.
  The element is "TITLE".
  <!ELEMENT      title   -   -   EMPTY>
  ^^^^^
-->
<!-- **Error** in "9382-2.sgm", line 631:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E".
  systems.</PARA></SUBPARA3></SUBPARA2> <SUBPARA2>&E; <TITLE TITLE="Developme
  ^
-->
<!-- **Error** in "9382-2.sgm", line 632:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E.".
  and development effort DT&E.; Specific capabilit ies include the following
```

```

-->
<!-- **Error** in "9382-2.sgm", line 632:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E".
  ude the following.</PARA> <SUBPARA3>&E; <TITLE TITLE="Perform System DT" TO
-->
<!-- **Error** in "9382-2.sgm", line 633:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E".
  rfaces.</PARA></SUBPARA3> <SUBPARA3>&E; <TITLE TITLE="Perform End-to-End DT
-->
<!-- **Error** in "9382-2.sgm", line 636:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E".
  nditions.</PARA></SUBPARA3> <SUBPARA3>&E; <TITLE TITLE="Support End-to-End
-->
<!-- **Error** in "9382-2.sgm", line 638:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E".
  interface.</PARA></SUBPARA3> <SUBPARA3>&E; <TITLE TITLE="Perofrm SPA Unique
-->
<!-- **Error** in "9382-2.sgm", line 638:
  General entity reference must be a declared general entity or there must be
  DEFAULT entity.
  The undefined entity is "E.".
  " TOCENTRY="1"> <PARA>The SPA shall perform SPA unique system DT&E.;</PARA>
-->
<!-- **Error** in "9382-2.sgm", line 681:
  An attribute specification found in a start tag or an entity declaration
  must have been declared for the associated element or notation.
  In the start tag for element "FIGURE", the unknown attribute "F" is used.
  Allowed attributes for the element are "FFILE".
  E="DMSP A-SPEC Table 3.cgm"> <FIGURE F FILE="DMSP A-SPEC Table 4.cgm">acces
-->
<!-- **Error** in "9382-2.sgm", line 681:
  An attribute specification found in a start tag or an entity declaration
  must have been declared for the associated element or notation.
```

In the start tag for element "FIGURE", the unknown attribute "FILE" is used.
Allowed attributes for the element are "FFILE".
DMSP A-SPEC Table 3.cgm"> <FIGURE F FILE="DMSP A-SPEC Table 4.cgm">access c
^^^^

-->
<!-- **Error** in "9382-2.sgm", line 681:
In a start tag or ENTITY declaration, every required attribute must be given
a value.
In the start tag for element "FIGURE", the REQUIRED attribute "FFILE" is not
specified.
Table 3.cgm"> <FIGURE F FILE="DMSP A-SPEC Table 4.cgm">access capabilities.
/\

-->
<!-- **Error** in "9382-2.sgm", line 740:
An attribute specification found in a start tag or an entity declaration
must have been declared for the associated element or notation.
In the start tag for element "TITLE", the unknown attribute "TITL" is used.
Allowed attributes for the element are "TITLE" and "TOCENTRY".
</PARA></SUBPARA2> <SUBPARA2><TITLE TITL E="System Software" TOCENTRY="1">
^^^^

-->
<!-- **Error** in "9382-2.sgm", line 740:
An attribute specification found in a start tag or an entity declaration
must have been declared for the associated element or notation.
In the start tag for element "TITLE", the unknown attribute "E" is used.
Allowed attributes for the element are "TITLE" and "TOCENTRY".
RA></SUBPARA2> <SUBPARA2><TITLE TITL E="System Software" TOCENTRY="1"> <PAR
^

-->
<!-- **Error** in "9382-2.sgm", line 740:
In a start tag or ENTITY declaration, every required attribute must be given
a value.
In the start tag for element "TITLE", the REQUIRED attribute "TITLE" is not
specified.
PARA2> <SUBPARA2><TITLE TITL E="System Software" TOCENTRY="1"> <PARA>The C3
/\

-->
<!-- **Warning** in "9382-2.sgm", line 798:
Data is not normally allowed at the current point, but will be allowed
through error recovery.
The open elements are "ASPEC", "BODY", "SYSREQ", "PANDT", and "TRAINING".
The following element can end: "TRAINING".
The following elements can start: "FIGURE", "PARA", or "SUBPARA1".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
An end tag that has been declared inomissible ("") must not be omitted.

The element is "TRAINING".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
An end tag that has been declared inomissible ("-") must not be omitted.
The element is "PANDT".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
A start tag with a start tag minimization of minus ("-") must not be
omitted.
The element is "CHARCS".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
The start tag of an element with CDATA, RCDATA or EMPTY content must not be
omitted.
The element is "TITLE".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
A start tag with a start tag minimization of minus ("-") must not be
omitted.
The element is "PARA".
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->
<!-- **Error** in "9382-2.sgm", line 798:
An end tag for an element that is not open is not allowed.
The element is "PANDT".
The open elements are "ASPEC", "BODY", "SYSREQ", "CHARCS", and "PARA".
The following element can end: "PARA".
The following element can start: "FIGURE".
Text is allowed.
On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
^^^^

-->
<!-- **Warning** in "9382-2.sgm", line 798:
A start tag is not allowed at the current point, but will be allowed through
error recovery.
The element is "CHARCS".
The open elements are "ASPEC", "BODY", "SYSREQ", "CHARCS", and "PARA".
The following element can end: "PARA".
The following element can start: "FIGURE".

Text is allowed.

On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
/\

-->

<!-- **Error** in "9382-2.sgm", line 798:

A start tag must not be used if the element is neither allowed by the
current content model or by an inclusion.

The element is "CHARCS".

On-The-Job-Training (OJT).</PARA></ TRAINING></PANDT> <CHARCS><TITLE TITLE=
^^^^^^

-->

<!-- **Error** in "9382-2.sgm", line 897:

Data cannot be allowed at the current point, and will be treated as if it
were part of an IGNORE marked section.

The open elements are "ASPEC", "REAR", and "APP".

The following element can end: "APP".

The following elements can start: "FIGURE" or "PARA".

ions).</PARA> <FIGURE FFILE="App A-2">/ <FIGURE FFILE="App A-3"> <FIGURE FF
/\

-->

<!-- **Warning** in "9382-2.sgm", line 899:

The document must not end at this point.

The open elements are "ASPEC", "REAR", and "APP".

The following element can end: "APP".

The following elements can start: "FIGURE" or "PARA".

-->

<!-- **Error** in "9382-2.sgm", line 899:

An end tag that has been declared inomissible ("-") must not be omitted.

The element is "APP".

-->

<!-- **Error** in "9382-2.sgm", line 899:

An end tag that has been declared inomissible ("-") must not be omitted.

The element is "REAR".

-->

<!-- **Error** in "9382-2.sgm", line 899:

An end tag that has been declared inomissible ("-") must not be omitted.

The element is "ASPEC".

-->

<!-- 24 errors and 7 warnings reported. -->